

# Farm/Herd Report - Wisconsin

## U.S. Dairy Forage Research Center - Annual Field Operations Report

### January 1997

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As in 1995, the 1996 growing season began with very cold temperatures. But in contrast to the hot 1995 season, cool temperatures prevailed through most of the 1996 growing season. On 15 May only 5 growing degree days had accumulated and no corn had emerged. Air temperature seldom exceeded 80 degrees F. Rainfall in April was below normal. Rainfall in May was above normal and its pattern caused delayed corn and soybean planting. Rainfall recorded at the farm entrance rain gauge in inches was 1.64 in April, 4.1 in May, 7.83 in June, 3.44 in July, 1.97 in August, 0.88 in September and 3.29 in October. Between 16 and 18 June, 4.35 inches of rain fell at the farm. In Baraboo, just to the north of the farm, rainfall amounts of 7 to 10 inches were recorded. This rain flooded many fields in our area resulting in loss of crops. At the research farm we were fortunate to lose only about 10 acres of soybeans and 4 acres of corn. Soils in most fields sustained nitrogen (N) leaching and anaerobic N losses. The 1995/96 winter was extremely cold, and it also produced some January/February ice sheeting that killed or injured alfalfa in several areas of Minnesota and Wisconsin; however, alfalfa at the research farm tolerated the winter fairly well. The cold April and May temperatures slowed growth of alfalfa and delayed the start of first crop harvest into early June. We planted 66 acres of barley, 233 acres of soybeans, 369 acres of corn, 77 acres of spring and 66 acres of summer seeded alfalfa. The prior year's seedings of alfalfa totaled 293 acres. Barley planting started on 18 April and was completed on 23 April. All barley was no-till planted at 110 pounds per acre into soybean stubble with a John Deere 750 no-till drill. Prior to seeding, parts of some fields were rotary hoed to facilitate drying of soil surface insulated by soybean residue and manure. We spread about 8,000 gallons per acre

of liquid manure on all barley fields. We no-till seeded alfalfa from 11 April to 7 May into fields that had corn harvested for silage in 1995. These fields also had 10,000 gallons of manure applied per acre. On 9 and 10 August we no-till seeded about 13 pounds per acre of alfalfa into harvested barley fields. We planted corn at about 33,500 to 43,000 seeds per acre from 23 April to 22 May. About 10 acres of grass sod were planted following conventional tillage, 85 acres of heavily manured corn residue were planted following one pass with a disk and 274 acres were planted no-till. We applied from 9,000 to 13,000 gallons of liquid manure per acre to most corn ground. All corn received 90 pounds per acre of 5-14-42 starter fertilizer and 160 pounds per acre of nitrogen from a combination of soybean, alfalfa and manure nitrogen (N) credits and surface applied 28% N. We no-till seeded soybeans in 7.5 inch rows at about 225,000 seeds per acre from 6 to 11 May.

Timely planting and nearly ideal growing temperatures produced barley yields that averaged 81.7 bushels per acre and ranged from 72.5 to 83.9 bushels per acre. We harvested barley from 23 to 27 July and stored it as a high moisture grain. Soybeans produced an average yield of 47.1 bushels per acre with a range of 32.7 to 63.2 bushels per acre. Soybean harvest occurred from 1 to 14 October. Excessive rain early in the growing season and very little rain during pod fill dramatically reduced soybean yields this season compared to those of 1994 and 1995 which were near 60 bushels per acre. Toward the end of the growing season, soybean plants on most knolls in all fields died prematurely due to lack of moisture. In addition to moisture stress, soybean plants in one particular field and in large areas of several fields exhibited severe symptoms of white mold.

Currently no soybean cultivars are resistant to white mold. This disease has many hosts and is affected very little by crop rotations.

About 2,779 wet tons of corn silage were harvested from 130 acres between 9 September and 10 October. Yields ranged from 6.7 to 8.3 tons of dry matter (DM) per acre and averaged 7.5 tons of DM per acre. We harvested about one third of our corn silage with a chopper equipped with a kernel processor that was loaned to the DFRC farm by John Deere to facilitate research with processed corn silage. We harvested approximately 165 acres of high moisture ground ear corn (HMGEC), 25 acres of HMG shelled (SC), and 49 acres of SC from 8 October to 8 November. The shelled corn (85% DM) equivalent yields averaged 166.5 bushels per acre and ranged from 132 to 183 bushels per acre. The total amount of HMGEC harvested was 1,488 tons adjusted to 29% moisture content. The total amount of HMGSC harvested was 151 tons adjusted to 29% moisture content. All non Bt corn was sprayed for corn borers this season. Corn on knolls in all fields exhibited symptoms of moisture stress and produced very small ears. But in general corn was able to obtain moisture in amounts sufficient to produce excellent yields this season. I also think that corn in this season benefited from availability of late season organic N provided by manure and legumes. The harvested alfalfa from established fields yielded an average of 4.1 tons DM per acre that ranged from 3.3 to 4.9 tons DM per acre. The cold spring delayed regrowth initiation and slowed subsequent growth which reduced first harvest yields. Most first crop yields were less than 1.8 tons DM per acre. Typically first crop yields ranged from 2 to 2.5 tons DM per acre.

Gene Dyar, Cluster Environmental Protection Specialist, continues to work on our fuel contamination located behind the milkhouse. Gene is optimistic that this site will be closed out with no need of major remediation. We hope to have final approvals early in 1997. I think that we have corrected the problems caused by lightening and electrical surges at both gate locations. Dan Mann of Wisconsin Power and Light discovered that the two gate houses containing our communication equipment were

improperly grounded. Since these buildings were properly grounded, we have not had any malfunctions of modems.

Projects completed this past season include the blacktopping of the road around our expanded bunkers and the drive pad areas in front of these bunker silos. We also removed about three quarters of a mile of overgrown tree lines between fields. These tree lines will be replanted with tall prairie grasses to improve habitat for game birds, such as pheasants. This project will reduce the labor needed to limb trees and to remove fallen trees from fields. It also will greatly enhance the crops' use of sunlight and moisture along these areas. The Center purchased a John Deere 750 no-till grain drill, a Brent GT 440 gravity box with running gear and a used Ford truck with a grain/forage box. With these purchases, the research farm now owns all of the equipment used in field operations. Equipment purchased to replace existing equipment consisted of two Model E Huskey manure tanks, a White Model 6106 corn planter, a Model 6200 forage harvester and Model 6221 feeder housing for our Uni harvesting system, and a Model 773 Bobcat skidsteer loader.

In April, Dave Sprecher, the Ag. Project Supervisor at the research farm, resigned his position to pursue new challenges. Dave has contributed invaluable service to the facility operation and to many research projects conducted over the years. Dave approached projects with enthusiasm and energy that went beyond normal expectations. His ingenuity and creativity in solving problems and his organizational skills are assets that benefited the Research Center in countless ways. We thank Dave for his many contributions and wish him the best in his future endeavors.

This past season, corn and soybeans were planted past midnight and haylage was hauled and packed in the bunker at 10:30 P.M. more than once. It was that kind of year, and our employees responded to these challenges as usual. I thank all of them for their past and continued efforts and flexibility as we work to meet our objectives.